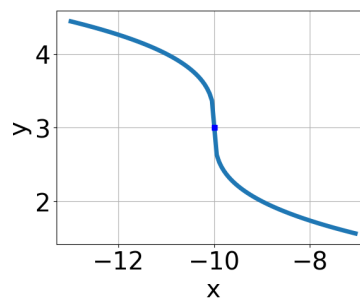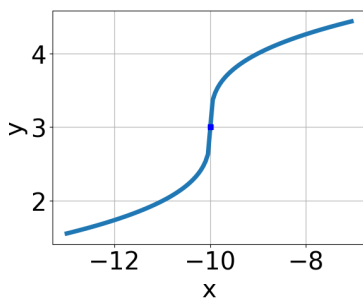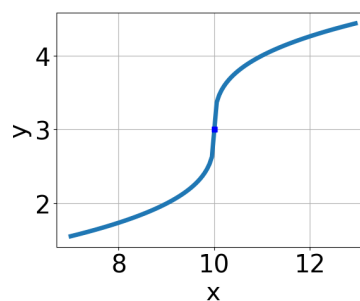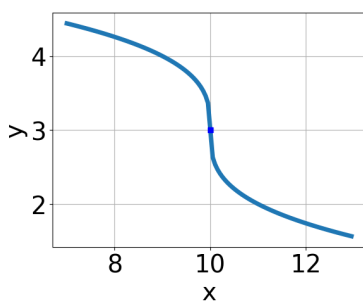1. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{9x + 3} - \sqrt{-7x + 3} = 0$$

A. $x \in [-0.02, 0.02]$

B. $x \in [-0.41, -0.35]$

C. $x_1 \in [-0.35, -0.28]$ and $x_2 \in [0.09, 1.35]$

D. All solutions lead to invalid or complex values in the equation.

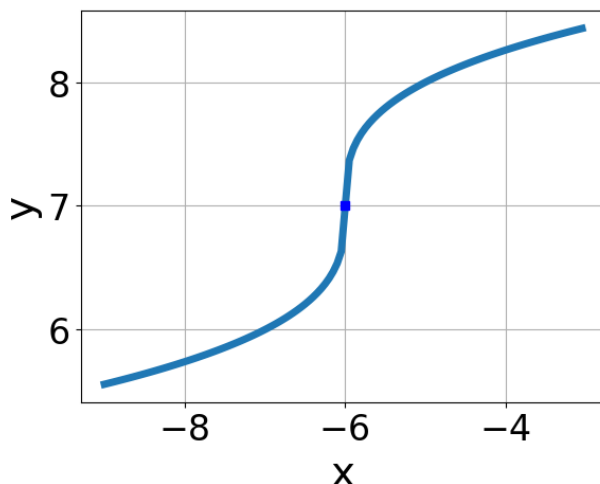E. $x_1 \in [-0.35, -0.28]$ and $x_2 \in [-0.71, 0.35]$

2. Choose the graph of the equation below.

$$f(x) = -\sqrt[3]{x + 10} + 3$$

A.

C.

B.

D.

E. None of the above.

3. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt[3]{x+6} + 7$

B. $f(x) = -\sqrt[3]{x-6} + 7$

C. $f(x) = \sqrt[3]{x+6} + 7$

D. $f(x) = \sqrt[3]{x-6} + 7$

E. None of the above

---

4. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-48x^2 + 15} - \sqrt{-22x} = 0$$

A. $x_1 \in [0.37, 0.57]$ and $x_2 \in [-0.17, 5.83]$

B. $x_1 \in [-0.55, -0.32]$ and $x_2 \in [-0.17, 5.83]$

C. All solutions lead to invalid or complex values in the equation.

D. $x \in [-0.55, -0.32]$

E. $x \in [0.38, 1.04]$

---

5. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{4x - 7} - \sqrt{9x - 2} = 0$$

A. $x_1 \in [0.18, 0.79]$ and $x_2 \in [0.75, 4.75]$

B. $x \in [-1.07, -0.45]$

C. $x_1 \in [-1.07, -0.45]$ and $x_2 \in [0.75, 4.75]$

D. All solutions lead to invalid or complex values in the equation.
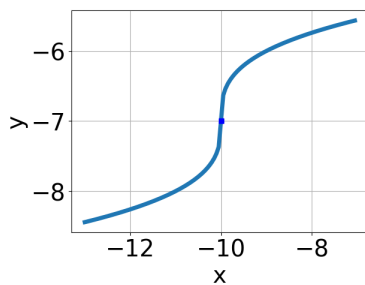
E. $x \in [-2.19, -1.77]$

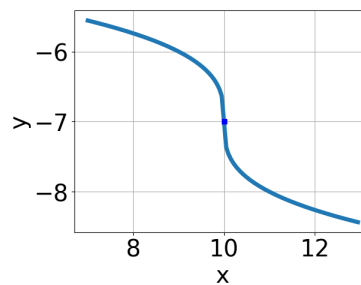6. What is the domain of the function below?

$$f(x) = \sqrt[3]{4x + 3}$$

A. The domain is $(-\infty, a]$, where $a \in [-1.5, -1.33]$

B. $(-\infty, \infty)$

C. The domain is $(-\infty, a]$, where $a \in [-0.77, 0.93]$

D. The domain is $[a, \infty)$, where $a \in [-1.26, -0.5]$

E. The domain is $[a, \infty)$, where $a \in [-1.4, -1.33]$

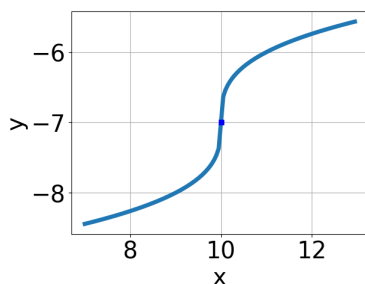---

7. Choose the graph of the equation below.
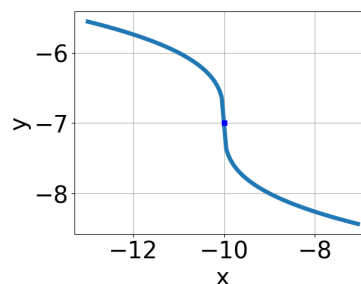
$$f(x) = \sqrt[3]{x + 10} - 7$$
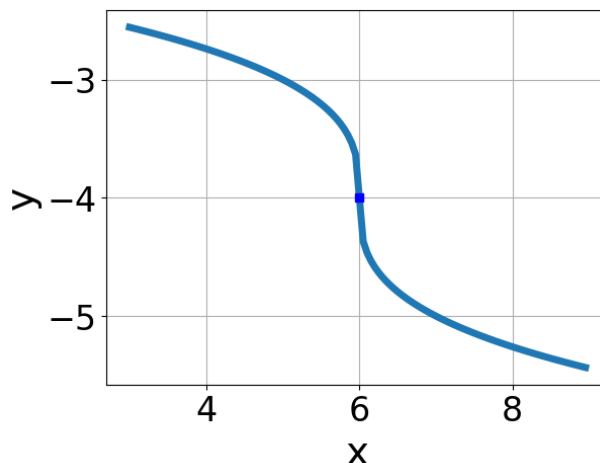

A.

C.

B.

D.

E. None of the above.

8. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt{x-6} - 4$

B. $f(x) = -\sqrt{x+6} - 4$

C. $f(x) = \sqrt{x+6} - 4$

D. $f(x) = \sqrt{x-6} - 4$

E. None of the above

9. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{36x^2 + 20} - \sqrt{-61x} = 0$$

A. $x \in [-1.86, -0.84]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-0.62, -0.28]$

D. $x_1 \in [-1.86, -0.84]$ and $x_2 \in [-1.9, -0.4]$

E. $x_1 \in [-0.31, 0.87]$ and $x_2 \in [1.2, 2.2]$

10. What is the domain of the function below?

$$f(x) = \sqrt[6]{5x + 3}$$

A. $(-\infty, a]$, where $a \in [-1.15, 1.69]$

B. $(-\infty, \infty)$

C. $[a, \infty)$, where $a \in [-1.6, 5.4]$

D. $(-\infty, a]$, where $a \in [-2.34, -1.3]$
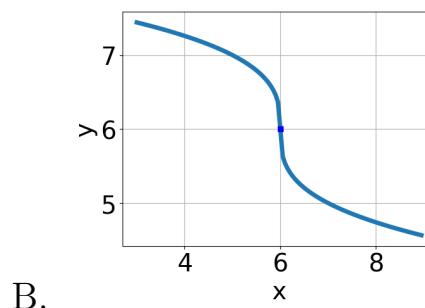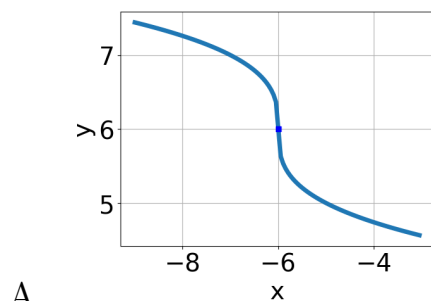
E. $[a, \infty)$, where $a \in [-4.67, -0.67]$

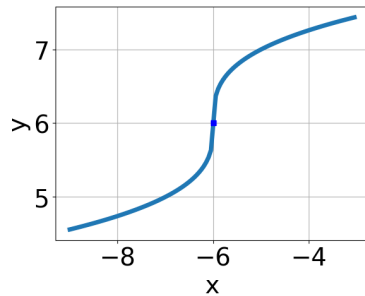11. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{3x - 8} - \sqrt{8x - 9} = 0$$

A. All solutions lead to invalid or complex values in the equation.

B. $x \in [-5.7, -1.7]$

C. $x_1 \in [-2, 1]$ and $x_2 \in [0.67, 4.67]$

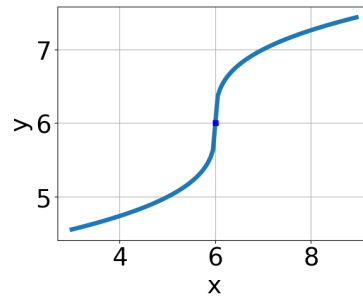D. $x_1 \in [0.3, 3.6]$ and $x_2 \in [0.67, 4.67]$

E. $x \in [-2, 1]$

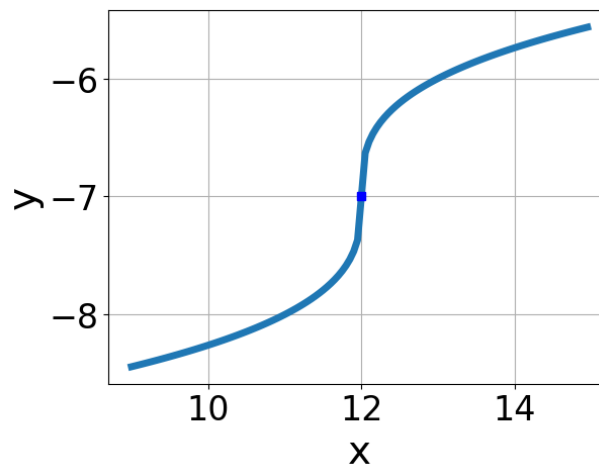12. Choose the graph of the equation below.

$$f(x) = \sqrt[3]{x + 6} + 6$$

A.

B.

C.

D.

E. None of the above.

---

13. Choose the equation of the function graphed below.

A. $f(x) = \sqrt[3]{x + 12} - 7$

B. $f(x) = \sqrt[3]{x - 12} - 7$

C. $f(x) = -\sqrt[3]{x + 12} - 7$

D. $f(x) = -\sqrt[3]{x - 12} - 7$

E. None of the above

---

14. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{21x^2 + 32} - \sqrt{-52x} = 0$$

A. $x_1 \in [0.9, 1.23]$ and $x_2 \in [0, 1.9]$

B. $x \in [-1.34, -1.22]$

C. All solutions lead to invalid or complex values in the equation.

D. $x_1 \in [-1.34, -1.22]$ and $x_2 \in [-2.7, -0.4]$

E. $x \in [-1.3, -0.99]$

---

15. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-4x - 7} - \sqrt{7x - 4} = 0$$

A. $x \in [-0.88, -0.19]$

B. $x_1 \in [-2.12, -1.61]$ and $x_2 \in [0.4, 2]$

C. $x_1 \in [-2.12, -1.61]$ and $x_2 \in [-1.8, 0]$

D. All solutions lead to invalid or complex values in the equation.
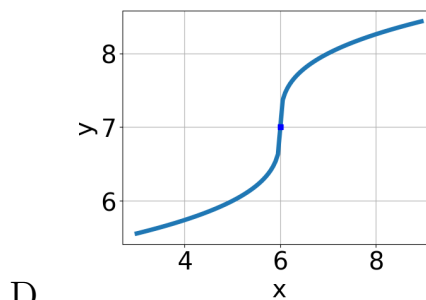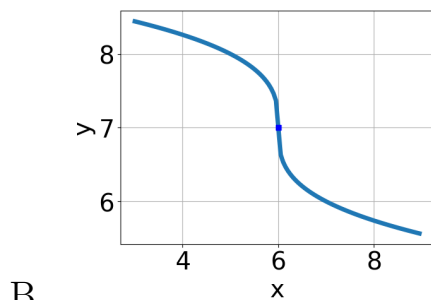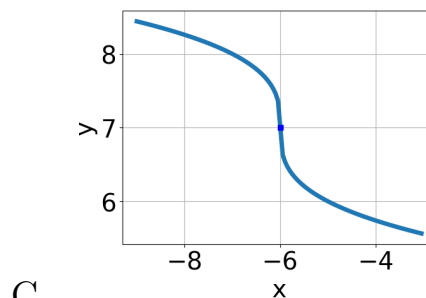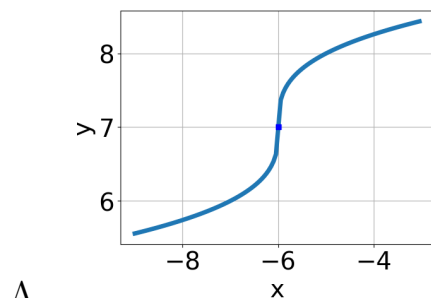
E. $x \in [-1.08, -0.42]$

---

16. What is the domain of the function below?

$$f(x) = \sqrt[6]{7x - 9}$$

A. $[a, \infty)$, where $a \in [1.19, 1.4]$

B. $(-\infty, \infty)$

C. $[a, \infty)$, where $a \in [0.44, 1.13]$

D. $(-\infty, a]$, where $a \in [1.02, 1.96]$

E. $(-\infty, a]$, where $a \in [0.33, 1]$

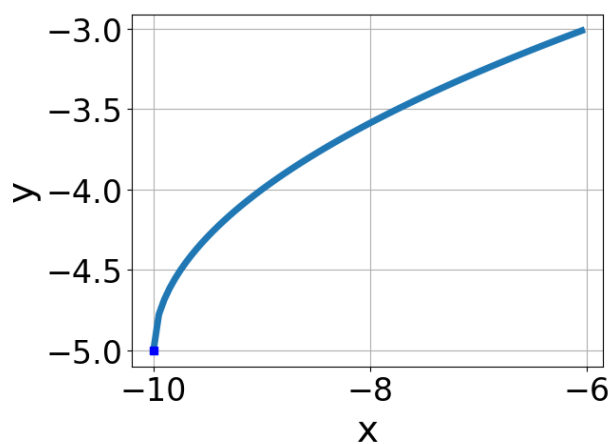17. Choose the graph of the equation below.

$$f(x) = -\sqrt[3]{x - 6} + 7$$

A.

C.

B.

D.

E. None of the above.

18. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt[3]{x + 10} - 5$

B. $f(x) = \sqrt[3]{x - 10} - 5$

C. $f(x) = -\sqrt[3]{x - 10} - 5$

D. $f(x) = \sqrt[3]{x + 10} - 5$

E. None of the above

19. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{21x^2 - 20} - \sqrt{13x} = 0$$

A. $x \in [1.14, 1.36]$

B. $x \in [-1.67, -0.1]$

C. $x_1 \in [-1.67, -0.1]$ and $x_2 \in [-3.67, 4.33]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [0.36, 1.29]$ and $x_2 \in [-3.67, 4.33]$

20. What is the domain of the function below?

$$f(x) = \sqrt[6]{8x - 4}$$

A. $[a, \infty)$, where $a \in [1.32, 2.07]$

B. $(-\infty, \infty)$

C. $(-\infty, a]$, where $a \in [1.5, 3.9]$

D. $[a, \infty)$, where $a \in [-0.56, 0.57]$

E. $(-\infty, a]$, where $a \in [-0.1, 0.6]$

21. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.
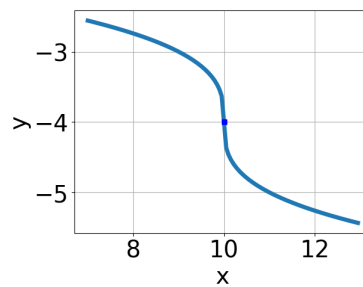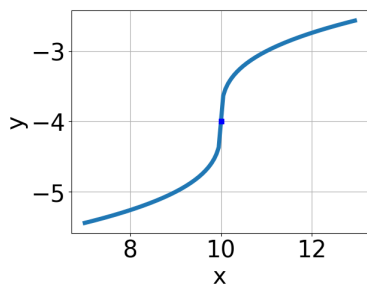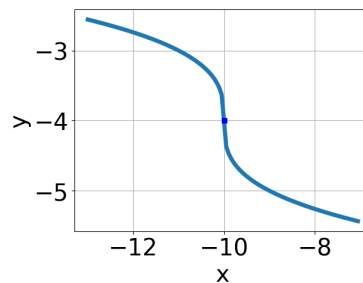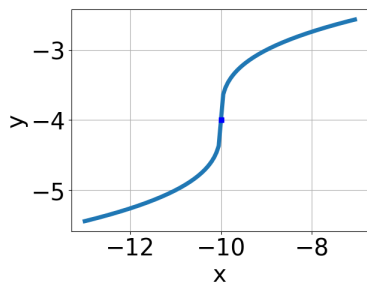
$$\sqrt{5x + 3} - \sqrt{-4x + 4} = 0$$

A. $x_1 \in [-0.76, -0.54]$ and $x_2 \in [-0.48, 0.56]$

B. $x_1 \in [-0.76, -0.54]$ and $x_2 \in [0.51, 1.27]$

C. $x \in [-1.03, -0.63]$

D. $x \in [0.03, 0.38]$

E. All solutions lead to invalid or complex values in the equation.
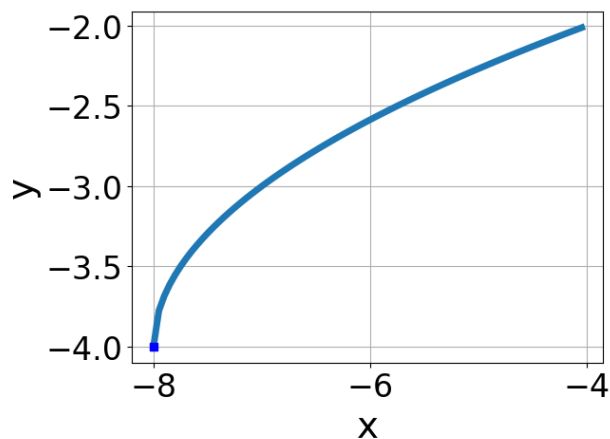
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22. Choose the graph of the equation below.

$$f(x) = -\sqrt[3]{x + 10} - 4$$

A.

C.

B.

D.

E. None of the above.

---

23. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt{x - 8} - 4$

B. $f(x) = \sqrt{x + 8} - 4$

C. $f(x) = -\sqrt{x+8} - 4$

D. $f(x) = \sqrt{x-8} - 4$

E. None of the above

---

24. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-16x^2 + 36} - \sqrt{-14x} = 0$$

A. $x \in [1.9, 2.8]$

B. $x_1 \in [-1.23, -0.78]$ and $x_2 \in [-1, 3]$

C. $x \in [-1.23, -0.78]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [1.05, 1.16]$ and $x_2 \in [-1, 3]$

---

25. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{6x - 2} - \sqrt{-7x + 9} = 0$$

A. All solutions lead to invalid or complex values in the equation.

B. $x \in [0.38, 1.4]$

C. $x_1 \in [-0.07, 0.7]$ and $x_2 \in [1, 1.4]$

D. $x \in [-1.36, -0.06]$

E. $x_1 \in [-0.07, 0.7]$ and $x_2 \in [0.8, 1]$

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26. What is the domain of the function below?
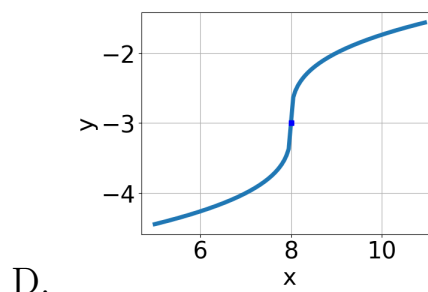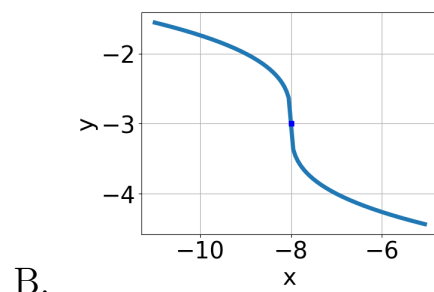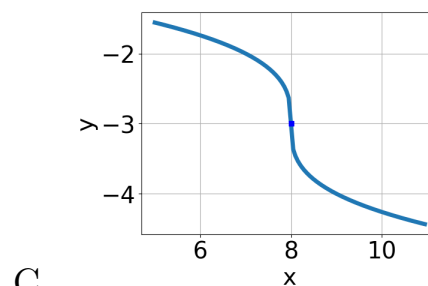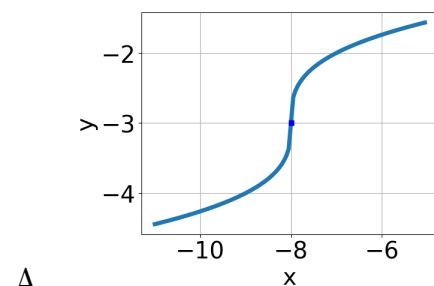
$$f(x) = \sqrt[7]{-7x - 9}$$

A. The domain is $[a, \infty)$, where $a \in [-0.81, 0.1]$

B. $(-\infty, \infty)$

C. The domain is $(-\infty, a]$, where $a \in [-1.24, 0.46]$

D. The domain is $(-\infty, a]$, where $a \in [-1.4, -0.78]$

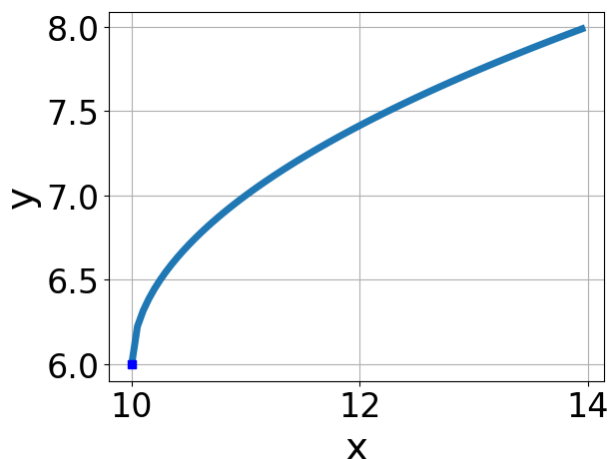E. The domain is $[a, \infty)$, where $a \in [-1.49, -1.01]$

---

27. Choose the graph of the equation below.

$$f(x) = -\sqrt[3]{x + 8} - 3$$

A.

C.

B.

D.

E. None of the above.

---

28. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt[3]{x - 10} + 6$

B. $f(x) = \sqrt[3]{x + 10} + 6$

C. $f(x) = \sqrt[3]{x - 10} + 6$

D. $f(x) = -\sqrt[3]{x + 10} + 6$

E. None of the above

29. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{40x^2 + 42} - \sqrt{-83x} = 0$$

A. All solutions lead to invalid or complex values in the equation.

B. $x \in [-1.17, -0.73]$

C. $x_1 \in [0.82, 1.04]$ and $x_2 \in [-0.8, 3.2]$

D. $x \in [-1.78, -1.01]$

E. $x_1 \in [-1.78, -1.01]$ and $x_2 \in [-1.87, 1.13]$

30. What is the domain of the function below?

$$f(x) = \sqrt[6]{-4x + 5}$$

A. $(-\infty, \infty)$

B. $(-\infty, a]$, where $a \in [0.82, 1.31]$

C. $(-\infty, a]$, where $a \in [0.55, 0.93]$

D. $[a, \infty)$, where $a \in [0.59, 1.19]$

E. $[a, \infty)$, where $a \in [1.1, 1.43]$